

**WE CLAIM AS OUR INVENTION:**

1. A high-capacity x-ray tube comprising:  
a vacuum housing;  
a cathode stationarily mounted in said vacuum housing;  
an anode rotatably mounted in said vacuum housing;  
a drive for rotating said anode, said drive having a bearing shaft disposed in  
said vacuum housing; and  
said anode comprising an anode plate and a load-bearing part having a first  
end attached to said bearing shaft and a second end attached to said  
anode plate via a soldered connection between respective connection  
surfaces of said anode plate and said load bearing part, with said  
connection surfaces configured and oriented relative to each other to  
form a positive fit for causing said connection surfaces to be subject  
substantially only to compression upon rotation of said anode.
2. A high-capacity x-ray tube as claimed in claim 1 wherein said  
connection surfaces form a clamp connection as said positive fit.
3. A high-capacity x-ray tube as claimed in claim 1 wherein said  
connection surfaces form a screw connection as said positive fit
4. A high-capacity x-ray tube as claimed in claim 1 wherein said solder  
connection contributes to said positive fit.
5. A high-capacity x-ray tube as claimed in claim 1 wherein said  
connection surfaces comprise a first surface at said second end of said load-bearing  
part and a second surface formed by an inner annular edge of said anode plate, said  
first and second surfaces facing each other and, as viewed toward said bearing  
shaft, said first surface comprising a plurality of gradations, at least one of said

gradations producing said positive fit and at least one further one of said gradations forming, with said second surface, an acceptance space for solder of said solder connection.

6. A high-capacity x-ray tube as claimed in claim 1 wherein said solder connection produces flaked solder particles, and wherein said connection surfaces form a recess for catching said solder particles.

7. A high-capacity x-ray tube as claimed in claim 6 wherein one of said connection surfaces is beveled to form said recess.

8. A high-capacity x-ray tube as claimed in claim 1 wherein said solder connection comprises titanium solder.